EXTERNAL LIGHTING DESIGN

FOR

SYMMETRY PARK, ARDLEY

FOR

TRITAX SYMMETRY

EXTERNAL LIGHTING DESIGN

FOR

SYMMETRY PARK, ARDLEY

FOR

TRITAX SYMMETRY

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CONTENTS

ISSUE	AUTHOR	REVIEW STATUS	QA REVIEW	DATE
01	BGH	First Issue	RES	16/12/21
02	VK	Revised Building Layout	RES	26/04/22

1.00 EXECUTIVE SUMMARY

The external lighting installations serving the buildings at Symmetry Park Ardley have been designed in accordance with British Standards, CIBSE Codes and ILP Guidance Note 1 to limit the light pollution impact to the surrounding area and in particular the spill at the boundary to the east of the site where a 30 metre boundary zone is being provided with a bund and planting so as not to impact on neighbouring property “Lawn Barn” and the village of Stoke Lyne. Only luminaires with zero upward light output will be specified and careful consideration will be given to photometric distribution to limit glare from secondary surfaces and impact on night time skies.

It is considered that the lighting assessment shows that there is no significant environmental spillage or impact to residential amenity or other environmental concerns as a result of the lighting installation either during construction or in operational phases**.**

The attached technical information details the design to support this statement.

2.00 INTRODUCTION

This supporting information is for consideration by the Cherwell District Council Planning Department for the buildings at Symmetry Park, Ardley. The report includes lux levels within the site and surrounding areas, and includes supporting technical information. The external lighting design has been carried out with regard to British Standards and CIBSE Guides and with special consideration to limiting light pollution generally and in particular to adjacent properties.

3.00 TECHNICAL INFORMATION

External lighting design will incorporate the requirements of BS 5489-1:2020 and BS12464-2:2014 Part 2. All luminaires will be selected to have zero upward light output with shielding to limit light spill to surrounding areas and have a photometric distribution to control illumination of vertical surfaces and secondary reflected lighting pollution.

Roadway lighting will be LED Road Distribution luminaires mounted on single arm brackets, which will be fitted to 8 metre or 10 metre high lighting columns.

Car parking areas lighting will be LED Forward Throw / Asymmetric Distribution luminaires mounted on single or double arm brackets, which will be fitted to 8m high lighting columns.

Service Area lighting around the units will be LED forward throw distribution luminaires with a higher lumen output, mounted on 10m lighting columns and single arm brackets. Additional LED area distribution luminaires to be wall mounted at a height of 8m on building perimeter walls.

Loading Bay Area lighting, will be bulkhead LED luminaires mounted on the building façade above each docking door at a height of 4m.

Wall mounted LED bulkhead luminaires shall be fitted on the perimeter at 3.5m mounting height.

Wall mounted emergency lights shall be provided above each fire exit door at 3.5m mounting height.

All lighting will be operated via photocells with each zone of lighting having its own time switch override control. Roadway lighting will be photocell controlled.

Lighting will be operational every day of the week, including public holidays.

The design of the lighting has been developed so as not to cause visual intrusion and unacceptable light spillage to residential properties.

Shields will be fitted to luminaires where required to prevent light intrusion, to protect adjacent properties from direct glare and to limit lighting levels to 1.0 lux in the 30 metre boundary zone to the east of the site.

Lighting columns are 8 or 10 metre root mounted tubular steel columns, designed in accordance with EN40. Finish galvanised to ISO 1461. Hinge down pattern for external winch operation.

Obtrusive Lighting and Planning Conditions

The following section is in reference to the ILP guidance notes on obtrusive light pollution 2021. Based on table 2 – Environmental Zones of the guidance notes it is assumed the services area and office parking bays shall fall under zone category E2 (Rural) / E3 (Suburban).

As per

Table 3 - Maximum values of vertical illuminance on premises
Table 4 - Limits for the luminous intensity of bright luminaires
Table 6 - Limitation of skyglow

the following standards will not be exceeded.

Environmental Zone	Sky Glow ULR (Max %) (Table 6)	Light Intrusion (into windows) Ev[Lux] (Table 3)		Upper Limit of Luminaire Intensity I [candelas] Apparent Surface A_p of Light Source > 0.5 (Table 4)	
		Pre Curfew	Post Curfew	Pre Curfew	Post Curfew
E2	2.5	5	1	7,500	500
E3	5.0	10	2	10,000	1,000

Note: the light intrusion into windows is not applicable in the current scenario. Calculation result outputs have determined that the above standards have not been exceeded.

The lighting layout outputs are in accordance with table 5 within the ILP guidance notes under road classification M4 / M3 which states Threshold Increment shall not exceed 15% based on adaption luminance of 2.0 cd/m and veiling luminance (L_v) of 0.40.

All directional signage, security and roadway lighting is required to operate 24 hours via photocell control with an additional manual and programmable automatic off switch.

Display signage will comply with ILP guidance notes and all non-essential lighting will be photocell controlled with time switch override to switch off power between the hours of 11.00pm and 7.00am.

Refer to the drawings included in the appendices for visual representation of lux levels at specific points through the service areas, transport, parking areas, office and loading areas. The drawings also show the types and locations of luminaires, illumination levels throughout the site. The drawings also display levels of obtrusive lighting and spill at the site boundary.

4.00 CONCLUSION

It is considered that the lighting assessment shows that there is no significant environmental spillage or impact to residential amenity or other environmental concerns as a result of the lighting installation either during construction or in operational phases.

APPENDIX A

LIST OF DRAWINGS

Drg No. 20962/SK/1001- 01 Symmetry Park Ardley, External Lighting Typical Lighting Levels